

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested in view of the above amendments and the following remarks.

Claims 59-62, 64-68, and 75-88 are pending in this application. By this Amendment, Claims 59, 60, 65, 66 and 71 have been amended; and Claims 75-88 have been added. The amendments to Claims 59, 60, 65, 66 and 71 have been made for purposes of clarifying the claims and are supported, by non-limiting example, in application FIG. 3 and the corresponding specification description. New Claims 75-87 are supported, by non-limiting example, in the specification pages 31-35. New Claim 88 is supported, by non-limiting example, in application FIG. 3 and the corresponding specification description at least at page 29, line 5 to page 31, line 3. Accordingly, it is respectfully submitted that no new matter has been added.

In the outstanding Office Action, Claims 59-62, 64-68 and 70-73 were rejected under 35 U.S.C. §103(a) as being unpatentable over Miura et al. (U.S. 2002/0028004 A1, hereinafter Miura) in view of Marchitto et al. (U.S. 6,889,075 B2, hereinafter Marchitto).

Applicant hereby expresses appreciation for the grant of a personal interview on July 15, 2010. During that interview arguments were presented consistent with the arguments to follow that Claims 59, 65, and 71 are patentable over the cited references. During that interview and in subsequent telephonic discussions, including a fax dated July 21, 2010 and an email dated August 2, 2010, amendments to Claims 59, 65 and 71 proposed by the Examiner and the Primary Examiner were discussed. Applicant declines to file those Amendments at this time as the claims as amended and the newly added claims included within this Amendment are considered to be patentable for the reasons to be described below.

Claims 59 and 65 recite, in part, “a shield which prevents the near-infrared light scattered in a shallow portion of the body from reaching the detecting unit.” Claim 71 recites

similar subject matter in method format. It is respectfully submitted that these features are neither disclosed by nor rendered obvious by Miura, Marchitto, or the combination thereof.

The Office Action correctly recognizes that

Miura does not disclose a near infra-red light; a shield which prevents light scattered in a shallow portion of the body from reaching the detecting unit by limiting an aperture of an imaging optical system of the detecting unit; and light source unit and the detecting unit are non-coaxial with one another; and detecting unit detects the image of the near infra-red light reflected or scattered in the body on the different position from the position of the light emitted by the light source unit.

The Office Action subsequently asserts that:

Marchitto, in the same field of endeavor, teaches a near infra-red light (see fig. 5, col. 6, lines 10-61; imaging information (FIG. 5) using a pulsed laser producing near infrared radiant energy); a shield which prevents light scattered in a shallow portion of the body from reaching the detecting unit by limiting an aperture of an imaging optical system of the detecting unit (see fig. 4, col. 5, lines 45-col. 6, lines 1-9, fig. 9; reflected radiant energy can be captured by a detector, which is positioned behind an aperture); and light source unit and the detecting unit are non-coaxial with one another (see fig. 5, col. 6, lines 10-61); detecting unit detects the image of the near infra-red light reflected or scattered in the body on the different position from the position of the light emitted by the light source unit (see fig. 5, col. 6, lines 10-61).

Applicant respectfully disagrees.

Regarding EXAMPLE 5 and FIG. 5, Marchitto states:

For practical reasons, such an imaging scheme may benefit from using a Q-switched Nd:YAG laser (1064 nm), as such lasers are relatively inexpensive and fortuitously blood absorbs strongly at 532 nm. The 532 nm scattered information could be collected in synchrony with the pulsed Nd:YAG laser. On alternate stands, white light or infrared images could be captured. Comparison of the two could be used to determine the location of the blood (or other light absorbing/scattering chromophore) in the field of U.¹

¹ Column 6, lines 51-61.

It is respectfully submitted that the above quoted section of Marchitto does not describe a shield which prevents the near-infrared light scattered in a shallow portion of the body from reaching the detecting unit. Furthermore, there is no shield shown in Marchitto FIG. 5. Rather, the above quoted portion of the reference is describing the absorption of the laser light by the blood causing the stimulation thereof. The above quoted portion is further describing the scattering of that light. Rather, the description in Marchitto of the unnumbered rotating filter wheel in Fig. 5 makes clear that the 532 nm bandpass filter and the aperture serve the purpose of alternating scans of white and infrared images. Thus, there is no description in Marchitto that the rotating filter wheel is a shield or that it prevents the near-infrared light scattered in a shallow portion of the body from reaching the detecting unit. In other words, the rotating filter wheel permits white light to reach the imaging device in one position and 532 nm light to reach the imaging device in the alternate position. Therefore, Marchitto does not describe the features of Claims 59, 65 and 71 quoted above.

In the Response to Arguments section of the Office Action, the Examiner asserts:

Furthermore, examiner notes that the amended limitation is known readily by one skilled in the art and also shown extensively with an image analysis and the camera sector.

Under the procedure described in M.P.E.P. § 2144.03, Applicant challenges this assertion.

M.P.E.P. § 2144.03(A) provides:

It would not be appropriate for the Examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known.

It is respectfully submitted that a shield which prevents the near-infrared light scattered in a shallow portion of the body from reaching the detecting unit as recited in Claims 59, 65 and 71 is not so well known as to be capable of instant and unquestionable demonstration as being well-known. That is, there is no reason to expect that either image analysis or the

camera sector would describe a shield which prevents the near-infrared light scattered in a shallow portion of the body from reaching the detecting unit.

M.P.E.P. § 2144.03(C) provides:

If applicant adequately traverses the examiner's assertion of official notice, the examiner must provide documentary evidence in the next Office Action if the rejection is to be maintained.

Accordingly, it is respectfully requested that either the Examiner cite a reference within image analysis and the camera sector describing the amended limitation pursuant to the assertion in the Office Action, or the Examiner expressly withdraw the above statement. In the even that the Examiner withdraws this statement and/or fails to cite a reference, it is respectfully submitted that the rejection of Claims 59, 65, 71 and the claims dependent thereon be withdrawn.

It is respectfully submitted that Claims 60-62, 64, 66-68, 70, 72-73 and 88 are patentable at least for the reasons argued above with regard to Claims 59, 65 and 71.

Newly added independent Claims 75 and 80 recite:

a detecting unit configured to detect an image of the near-infrared light reflected or scattered in the part of body by the light source and generate a biometric pattern using the detected image by measuring a phase difference between two frequency components of the detected near-infrared light so as to measure a magnitude of birefringence of the light.

Claim 85 recites similar subject matter in method format. It is respectfully submitted that these features are neither disclosed by nor rendered obvious by Miura, Marchitto, or the combination thereof.

Miura describes a configuration for picking up vein patterns in many directions within a finger. Miura states "[w]hen the finger 20 is inserted into the interface 1, the imaging

devices receive finger images in many directions.”² Miura describes identifying a pixel and tracking the length of a tracking point in the veins.³ Miura describes producing a score table based upon matched pixels.⁴ Therefore, Miura does not describe measuring a phase difference between two frequency components of the detected near-infrared light so as to measure a magnitude of birefringence of the light.

Marchitto describes “a method/system of enhancing optical imaging of an anatomical structure or a biomolecule utilizing one or more techniques selected from the group consisting of pulsatile enhanced imaging, confocal enhanced imaging, Raman enhanced imaging, laser speckle enhanced imaging, multiphoton interaction enhanced imaging, optical coherence chromography enhanced imaging, time correlated single photon counting enhanced imaging, and polarization enhanced imaging.”⁵ Marchitto does not describe measuring a phase difference between two frequency components of the detected near-infrared light so as to measure a magnitude of birefringence of the light.

Furthermore, it would not have been obvious to incorporate any of the above listed methods of Marchitto into Miura because those methods are inconsistent with the identification of pixels and tracking points described in Miura.

It is respectfully submitted that Claims 76-79, 81-84, 86, and 87 are patentable at least for the reasons argued above with regard to Claims 75, 80 and 85.

Accordingly, it is respectfully requested that the rejection of Claims 59-62, 64-68 and 70-73 be reconsidered and withdrawn, and that Claims 59-62, 64-68, 70-73 and 75-88 be found allowable.

² Paragraph [0033].

³ Paragraph [0051].

⁴ See FIGS. 13 and 14 and the corresponding specification description.

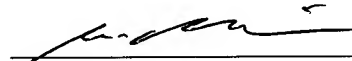
⁵ Column 3, lines 5-13.

Consequently, for the reasons discussed in detail above, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below-listed telephone number.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, L.L.P.



Bradley D. Lytle
Attorney of Record
Registration No. 40,073

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)

Michael L. Gellner
Registration No. 27,256

Marc A. Robinson
Registration No. 59,276

Marc A. Robinson
Registration No. 59,276